

ABSTRACT

A layered article and method for forming the same includes a single crystal silicon substrate, a silicon oxynitride layer ($\text{Si}_x\text{N}_y\text{O}_z$) disposed on the silicon substrate, and a single crystal GaN layer disposed on the oxynitride layer. The silicon oxynitride layer can be formed by nitridation of a native oxide layer. One or more integrated electronic circuits and/or integrated optical or optoelectronic devices can be built on the article.